OPERATING INSTRUCTIONS

INSTR
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EDL

TYPE 1208-C

UNIT OSCILLATOR

INSTRUMENT SHOP

GENERAL RADIO COMPANY

H

OPERATING INSTRUCTIONS

TYPE 1208-C

UNIT OSCILLATOR

Form 1208-0100-H
July, 1963

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West Concord, Massachusetts, USA

GENERAL RADIO COMPANY
WEST CONCORD, MASSACHUSETTS, USA

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SPECIFICATIONS

Frequency Range: 65 to 500 Mc.

Tuned Circuit: Variable L and C with sliding contacts.

Frequency Calibration Accuracy: ±2%.

Warmup Frequency Drift (Typical): 0.5%.

Frequency Control: A six-inch dial with calibration over 250°, with a slow-motion drive of about 10 1/2 turns.

Output Power into 50 Ohms: At least 240 mw up to 250 Mc and 80 mw up to 500 Mc with the Type 1269-A (or 1203-B) Power Supply. At least 170 mw up to 250 Mc and 60 mw up to 500 Mc with the Type 1201-B or 1267-A Power Supply. See Figure 1-3 for typical and guaranteed performance.

Output System: A coupling loop at the rear of the instrument feeds a Type 874 locking coaxial connector through a short, rigid coaxial line. The coupling loop can be adjusted over a wide range to control power output, and can be clamped in any position.

Modulation: An external audio-frequency plate modulator can be connected to the front panel MODulation jack. The modulation impedance is approximately 8000 ohms. A sine wave of 40 volts rms amplitude will produce approximately 30% amplitude modulation. For 400- and 1000-cycle modulation, the Type 1214-A Unit Oscillator is recommended. For minimum incidental fm, a Type 1000-P6 Crystal Diode Modulator or a Type 1000-P7 Balanced Modulator can be connected between the rf output and the load.

Power Supply: Four types of power supply are recommended; refer to Table of Accessories, paragraph 1.5. The choice of power supply depends on the intended application.

Tube: One 2C43.

Mounting: L bracket with 7-inch-high panel for rigid attachment to companion power supply and easy relay-rack mounting.

Accessories Supplied: Type 874-R22A Patch Cord, Type 874-C58A Cable Connector, and telephone plug.

Accessories Available: Refer to Table 1, paragraph 1.5.

Dimensions: Width 8, height 7 5/8, depth 8 1/2 inches (205 by 195 by 220 mm), over-all.

Net Weight: 6 pounds (2.8 kg). U.S. Patent No. 2,548,457

General Radio Experimenter References: Vol 37 No. 8 August 1963

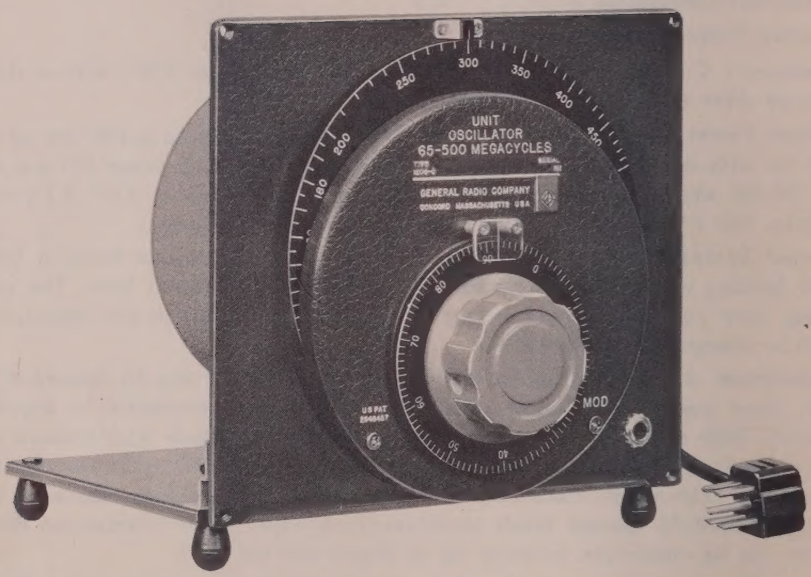

Figure 1-1. Panel view of the Type 1208-C Unit Oscillator.

SECTION I

INTRODUCTION

1.1 PURPOSE.

The Type 1208-C Unit Oscillator (Figure 1-1) is a general-purpose power source for the radio-frequency laboratory. Covering the range from 65 to 500 Mc, this member of the convenient Unit Instrument line can be used to drive bridges, slotted lines, impedance comparators, and other measuring equipment. Used with a voltmeter and attenuator, it provides an accurately known output voltage for the testing of receivers. Direct amplitude modulation is possible over the audio-frequency range, and amplitude modulation free from incidental fm can be obtained with a simple crystal-diode modulator from zero to 5 Mc. Connected to a mixer, the Unit Oscillator can be used as the local oscillator in a heterodyne receiver to convert the Type 1216-A Unit I-F Amplifier or a low-frequency communications receiver into vhf or uhf detector. Pulsing and linear 100-percent amplitude modulation can be obtained with an external balanced modulator.

1.2 DESCRIPTION.

1.2.1 GENERAL. The tuning system of the Type 1208-C Unit Oscillator is a "contact-type" circuit, which combines a variable air capacitor and a variable inductor in a single unit. Inductance varies from 0.06 μh at the low-frequency end to 0.01 μh at the high-frequency end, and capacitance varies from 100 pf to 8 pf. Rotor and stator plates are shaped so that frequency varies logarithmically with dial rotation. The vernier dial requires about 10 1/2 turns to rotate the main dial over its full 250 degrees. The frequency calibration is accurate within 2 percent.

Plate and grid of the Type 2C43 lighthouse oscillator tube are connected to the tuned circuit, and the cathode shell is grounded. The oscillator circuit is of the Colpitts type, with feedback determined essentially by the electrode capacitances of the tube.

1.2.2 OUTPUT SYSTEM. The output system is a short coaxial line, with a coupling loop on one end and a Type 874 Coaxial Connector on the other. Coupling between the loop and the oscillator can be adjusted over a wide range, and the loop can be clamped in the desired position. Maximum power can be delivered to load impedances normally encountered in coaxial systems.

Power available into a 50-ohm load is plotted against frequency in Figure 1-3 for a typical Type 1208-C Unit Oscillator.

1.2.3 FREQUENCY STABILITY. For many applications a well-regulated and filtered power supply should be used to avoid frequency variations caused by line-voltage fluctuation and to produce a clearer beat note at the highest frequencies. With an unregulated power supply, a line-voltage variation of 20 percent causes a frequency change of about 0.01 percent at frequencies up to 300 Mc, 0.1 percent at 400 Mc, and 0.5 percent at the top end of the frequency range.

1.2.4 POWER REQUIREMENTS. The Type 1208-C Unit Oscillator requires an external power supply. The choice among the four General Radio power supplies recommended in paragraph 1.5 should be based on the intended application of the oscillator. If a power supply other than one of those recommended is used, it should be capable of delivering 300 to 320 volts dc at 40 ma for the plate and 6.3 volts at 0.9 ampere for the heater. The Type 1208-C Unit Oscillator cannot be used with the Type 1263-B Amplitude-Regulating Power Supply or with the Type 1264-A Modulating Power Supply because the cathode of the oscillator is grounded directly to the oscillator mounting bracket.

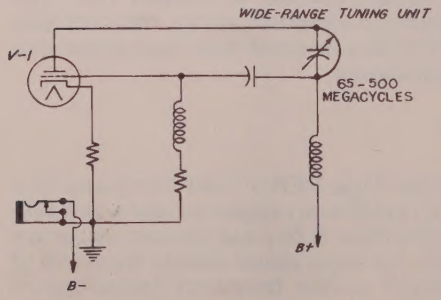

Figure 1-2. Elementary schematic diagram of the Type 1208-C Unit Oscillator.

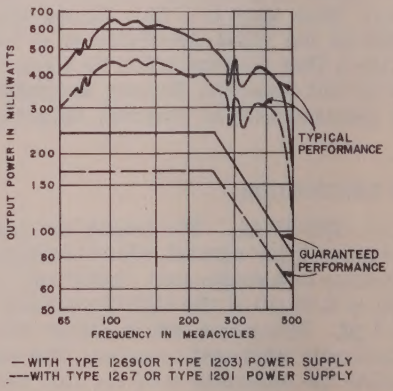

Figure 1-3. Output power into a 50-ohm load for a typical Type 1208-C.

1.2.5 ACCESSORIES SUPPLIED. Supplied with the Unit Oscillator are a Type 874-R22A three-foot coaxial double-shielded Patch Cord, a Type 874-C58A Cable Connector, and a phone plug.

1.3 AMPLITUDE MODULATION.

1.3.1 GENERAL. Amplitude modulation permits increased detection sensitivity through the use of a tuned amplifier, such as the General Radio Type 1232-A, following the rf detector. Recommended modulators are described in paragraph 1.5.

1.3.2 SINUSOIDAL AMPLITUDE MODULATION. A jack on the front panel of the oscillator permits connection of a plate modulator such as the Type 1214-A Oscillator. Appreciable incidental fm will accompany the amplitude modulation produced in this manner, especially at the high-frequency end of the tuning range. The audio oscillator must supply a dc path and must be able to carry 40 milliamperes dc. A sine wave of 40 volts rms amplitude will produce approximately 30% amplitude modulation.

1.3.3 ABSORPTION AMPLITUDE MODULATION. Amplitude modulation free from incidental fm can be obtained by connection of a crystal-diode absorption modulator between the oscillator output and the equipment under test. With the Type 1000-P6 Crystal Diode Modulator, 30% amplitude modulation can be obtained with a peak output of 10 millivolts across 50 ohms. With the Type 1000-P7 Balanced Modulator, excellent pulse modulation with 60-db carrier suppression between pulses and 20-nanosecond rise time is possible. The peak rf output is 10 millivolts across 50 ohms.

1.4 SWEEP OPERATION.

For occasional use, the frequency dial of the Type 1208-C Unit Oscillator can be mechanically swept back and forth by a Type 908-P1 or 908-R96 Dial Drive, but this mode of operation is not recommended because neither the bearings nor the sliding contacts in the oscillator are designed for sweep use. Lubrication of all moving parts (described in paragraph 4.5) is particularly important if the oscillator is mechanically swept.

1.5 AUXILIARY EQUIPMENT.

The Type 1208-C Unit Oscillator can be used in conjunction with a variety of auxiliary General Radio equipment to build a signal source system which is suited to specific requirements. Typical systems are shown in Figure 1-4.

Table 1 lists the accessories recommended for use with the Type 1208-C Oscillator. The choice of a recommended power supply or modulator should be based on the intended application of the oscillator. The Type 1267-A or 1269-A Power Supply can be readily attached to the Unit Oscillator to form a single unit for bench use or for relay-rack mounting with the listed adaptor plate set.

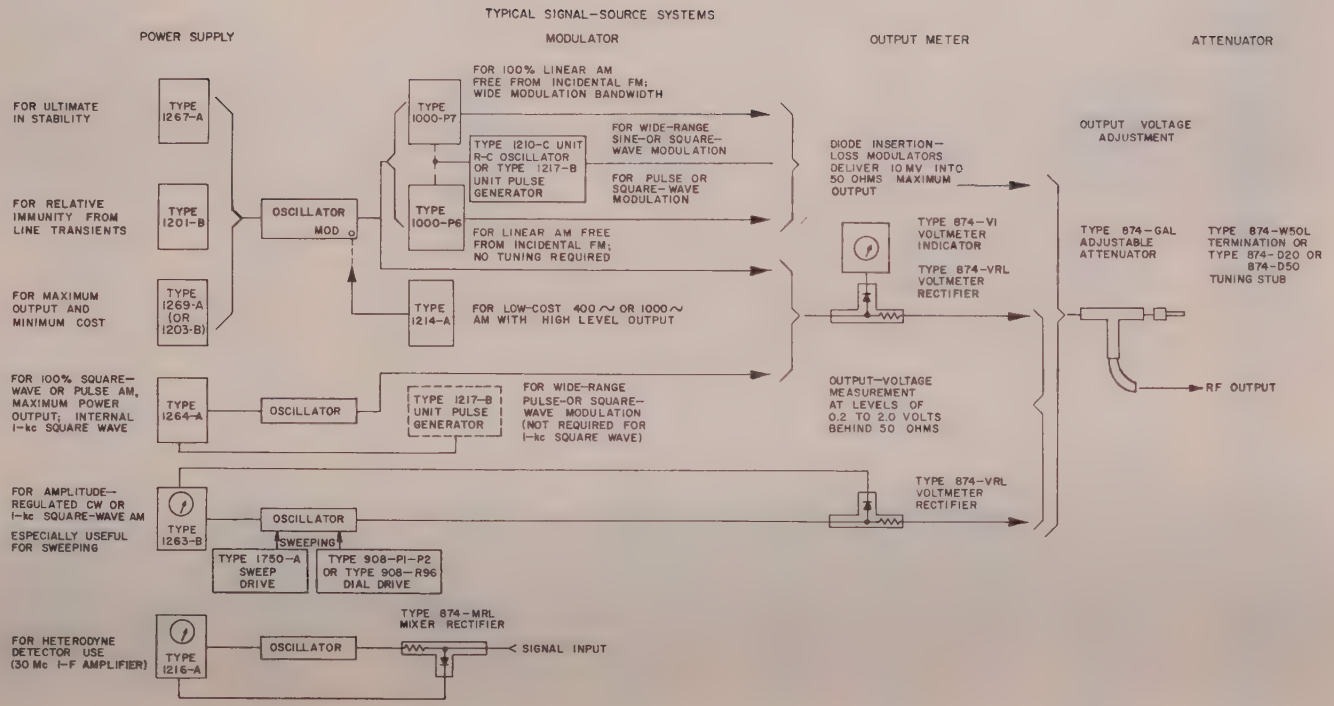
TYPICAL SIGNAL-SOURCE SYSTEMS
POWER SUPPLY
MODULATOR
OUTPUT METER
ATTENUATOR
FOR ULTIMATE IN STABILITY
TYPE 1267-A
FOR RELATIVE IMMUNITY FROM LINE TRANSIENTS
TYPE 1201-B
FOR MAXIMUM OUTPUT AND MINIMUM COST
TYPE 1269-A (OR 1203-B)
OSCILLATOR MOD
FOR 100% LINEAR AM FREE FROM INCIDENTAL FM; WIDE MODULATION BANDWIDTH
TYPE 1000-P7
TYPE 1210-C UNIT R-C OSCILLATOR OR TYPE 1217-B UNIT PULSE GENERATOR
FOR WIDE-RANGE SINE-OR SQUARE-WAVE MODULATION
FOR PULSE OR SQUARE-WAVE MODULATION
TYPE 1000-P6
FOR LINEAR AM FREE FROM INCIDENTAL FM; NO TUNING REQUIRED
TYPE 1214-A
FOR LOW-COST 400 ~ OR 1000 ~ AM WITH HIGH LEVEL OUTPUT
DIODE INSERTION-LOSS MODULATORS DELIVER 10 MV INTO 50 OHMS MAXIMUM OUTPUT
TYPE 874-VI VOLTMETER INDICATOR
TYPE 874-VRL VOLTMETER RECTIFIER
OUTPUT VOLTAGE ADJUSTMENT
TYPE 874-GAL ADJUSTABLE ATTENUATOR
TYPE 874-W50L TERMINATION OR TYPE 874-D20 OR 874-D50 TUNING STUB
RF OUTPUT
FOR 100% SQUARE-WAVE OR PULSE AM, MAXIMUM POWER OUTPUT; INTERNAL 1-kc SQUARE WAVE
TYPE 1264-A
OSCILLATOR
TYPE 1217-B UNIT PULSE GENERATOR
FOR WIDE-RANGE PULSE-OR SQUARE-WAVE MODULATION (NOT REQUIRED FOR 1-kc SQUARE WAVE)
OUTPUT-VOLTAGE MEASUREMENT AT LEVELS OF 0.2 TO 2.0 VOLTS BEHIND 50 OHMS
FOR AMPLITUDE-REGULATED CW OR 1-kc SQUARE-WAVE AM
ESPECIALLY USEFUL FOR SWEEPING
TYPE 1263-B
OSCILLATOR
SWEEPING
TYPE 1750-A SWEEP DRIVE
TYPE 908-P1-P2 OR TYPE 908-R96 DIAL DRIVE
TYPE 874-VRL VOLTMETER RECTIFIER
TYPE 874-MRL MIXER RECTIFIER
FOR HETERODYNE DETECTOR USE (30 Mc I-F AMPLIFIER)
TYPE 1216-A
OSCILLATOR
SIGNAL INPUT

Figure 1-4. Typical signal source systems built with a Unit Oscillator and associated equipment.

TABLE 1 - ACCESSORIES

FUNCTION	INSTRUMENT	REMARKS
POWER SUPPLIES		
For best stability, freedom from line-voltage variations, and minimum residual fm.	Type 1267-A Power Supply	Regulated dc plate and heater supplies.
For relative immunity from line transients.	Type 1201-B Unit Power Supply	Regulated dc plate supply and unregulated ac heater supply.
For maximum output at minimum cost.	Type 1269-A (or 12-03-B) Power Supply	Filtered dc plate supply and ac heater supply, both unregulated.
For use as local oscillator in heterodyne detector system.	Type 1216-A Unit I-F Amplifier	30-Mc center-frequency amplifier has calibrated attenuator and output meter. Use with Type 874-MR Mixer Rectifier.
MODULATORS		
For sinusoidal plate modulation at 400 and 1000 cps.	Type 1214-A Unit Oscillator	Provides 30% modulation.
Absorption modulation with no incidental fm.	Type 1000-P6 Crystal Diode Modulator	30% modulation; 10 mv peak rf output into 50 ohms. Requires modulation source.
Pulse modulation with excellent carrier suppression. Absorption modulation with no incidental fm.	Type 1000-P7 Balanced Modulator	100% modulation; 10 mv peak rf output into 50 ohms; 20-Mc modulation bandwidth. Requires modulation source.
ADAPTOR PLATE SETS		
To rack-mount the oscillator alone.	Type 480-P408 Adaptor Plate Set	
To rack-mount the oscillator with a Type 1267-A or 1269-A Power Supply.	Type 480-P412 Adaptor Plate Set	
COAXIAL ELEMENTS	See table at the rear of this manual.	
To convert from Type 874 to other coaxial systems.	Type 874-Q Adaptors	
To reduce standing-wave ratio on transmission lines.	Type 874-G Attenuators	
To reduce harmonic content of output from oscillator.	Type 874-F Filters	
For use in a heterodyne detector system.	Type 874-MR (-MRL) Mixer Rectifier	Particulary useful with Type 1216-A Unit I-F Amplifier.
To provide monitored output level.	Type 874-VR (-VRL) Voltmeter Rectifier	Use with Type 874-VI Voltmeter Indicator.

SECTION **2**

OPERATING PROCEDURE

2.1 INSTALLATION.

2.1.1 CONNECTION TO POWER SUPPLY. The Unit Oscillator is shipped complete with tube installed, and is ready for use when connected to a suitable power supply. A cord and connector are supplied with the instrument for direct connection to a General Radio Power Supply. Refer to paragraph 1.5 for power-supply recommendations.

To connect the oscillator to the power supply, plug the oscillator power cable into the receptacle on the side of the power supply.

2.1.2 BENCH MOUNTING. The Type 1267-A or Type 1269-A Power Supply can be rigidly attached to the oscillator by means of the narrow adaptor plate and associated screws supplied with the power supply and the clip which is attached to the oscillator L bracket with the mounting screw for the left front foot. To attach the units, proceed as follows:

a. Temporarily remove the upper and lower right-hand corner panel screws from the front panel of the power supply. Place the adaptor plate supplied with the power supply in position, and replace the screws.

b. Remove the front and rear left feet from the oscillator, and install the clip freed from the front-foot mounting screw on the top surface of the oscillator L bracket in the left rear foot mounting location. Note that the L bracket hole in this location is tapped 10-32 to secure the mounting screw. Do not replace the feet.

c. Attach the oscillator to the power supply by fastening the upper and lower right-hand corners of the adaptor plate to the corresponding tapped holes in the upper and lower left-hand corners of the oscillator panel. Attach the clip at the left-hand rear of the oscillator to the matched hole in the right-hand side panel of the power supply. The necessary screws and nut are supplied with the power supply.

2.1.3 RELAY-RACK MOUNTING. To rack-mount the oscillator by itself, a Type 480-P408 Adaptor Plate Set is required. To rack mount the oscillator attached to a Type 1267-A or 1269-A Power Supply, a Type 480-P412 Adaptor Plate Set is required. For either mounting, one plate is installed at the left-hand side of the unit and one at the right-hand side. The necessary screws are supplied with the Adaptor Plate Set. The procedure for installation is similiar to that described in paragraph 2.1.2.

2.1.4 RF OUTPUT CONNECTIONS. Connect the oscillator to the equipment under test by means of the three-foot coaxial cable supplied. If cables with military connectors are used, a suitable adaptor may be semipermanently attached to the locking Type 874 output receptacle of the oscillator. Refer to the table at the rear of this manual for a listing of the available adaptors.

Attenuator pads may help to reduce the standing waves on the cable where the equipment under test does not provide a good termination. Without padding, cable resonance effects may be quite pronounced since the output coupling loop of the oscillator is not a matched source. A low-pass filter may be beneficial in cases where oscillator harmonics must be kept to very low values.

2.1.5 MODULATOR CONNECTION. For amplitude modulation the audio modulating voltage should be inserted at the MODulation jack on the front panel. Full plate current must flow through the modulating source. A modulation voltage of about 40 volts is required for 30-percent modulation. The input impedance is about 8000 ohms. The Type 1214-A Unit Oscillator is an economical 400- and 1000-cycle modulator for the Type 1208-C Unit Oscillator.

2.2 OPERATION.

After turning on the power supply, adjust the frequency by means of the frequency dial, and adjust for maximum output by rotating the output coupling loop. To reduce the output, the coupling loop can be partly withdrawn. A setting of the coupling loop which is optimum at one frequency may not necessarily be desirable at another frequency, particularly if the load does not provide a good termination for the transmission line which connects it to the oscillator. If adequate padding (refer to paragraph 2.1.4) is used, a loop setting which is satisfactory at the high-frequency end of the tuning range will generally be suitable over the entire range.

SECTION **3**

APPLICATIONS

3.1 GENERAL.

The utility and versatility of the Type 1208-C Unit Oscillator are greatly increased by the large selection of Type 874 coaxial elements available from General Radio Company. These elements are part of a complete, integrated line of equipment for the measurement of voltage, power, and standing-wave ratio at very-high and ultra-high frequencies. Although the Unit Oscillator is intended primarily as a source of power for this measuring equipment and for other impedance measuring devices such as the Type 1602 UHF Admittance Meter, use of the coaxial elements can adapt the Unit Oscillator to various applications in the radio-frequency laboratory.

Three applications are described in detail in the following paragraphs. Others will be suggested by a study of the complete list of Type 874 coaxial elements included in the General Radio Catalog. Coaxial elements with either locking or nonlocking connectors can be used. A condensed list of Type 874 elements appears in the rear of this manual.

3.2 UNIT OSCILLATOR AS SIGNAL GENERATOR FOR RECEIVER TESTING.

The Type 1208-C, as a well-shielded power source, can be used as a signal generator to test receivers if means are available to measure and attenuate the output. The Type 874-VR Voltmeter Rectifier, Type 874-VI Voltmeter Indicator, and Type 874-GAL Adjustable Attenuator are suitable for this purpose, and should be connected to the Unit Oscillator as shown in Figure 3.1. Also, a Type 874-D50L Adjustable Stub is required at the higher frequencies (from 300 Mc up) to produce a current maximum at that point of the attenuator where the adjustable output loop is coupled. At lower frequencies

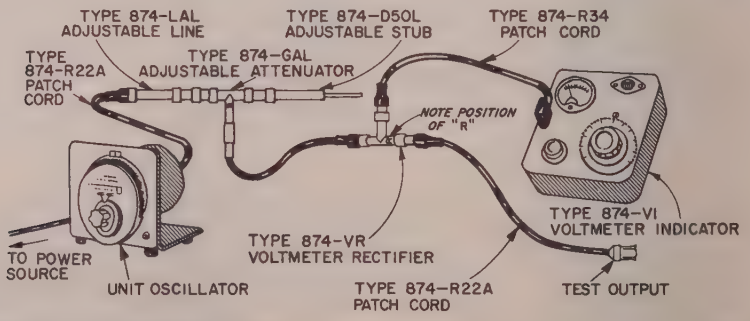

Figure 3-1. Unit Oscillator, with accessories, set up as a standard-signal generator.

a Type 874-WN Short-Circuit Termination can be used for this purpose. A tuning element between the oscillator and the attenuator is required to increase the output to a value that can be read on the voltmeter. At higher frequencies coverage is obtained by a Type 874-LAL Adjustable Line. At lower frequencies additional lengths of line must be used.

Current from the Unit Oscillator is fed through the attenuator into the short circuit or the stub. The attenuator is calibrated in decibels. At minimum attenuation the attenuator output is measured by a crystal diode in the voltmeter rectifier and read on the meter of the voltmeter indicator. Means are provided to standardize the crystal indication. A 50-ohm resistor after the crystal determines the output impedance.

With the above-described arrangement, the maximum available output is several tenths of a volt. The attenuator calibration covers 120 db, but shielding of the Unit Oscillator and of other components is not sufficient for accurate measurements in the microvolt region.

3.3 UNIT OSCILLATOR AS A TELEVISION-SIGNAL GENERATOR.

Used in combination with a Type 1000-P6 Crystal Diode Modulator and a Type 874-G20, 20-db Fixed Attenuator, the Unit Oscillator is a convenient source of television signals over its entire carrier-frequency range if video modulating voltage is available. (See Figure 3-2.) The modulating voltage required can be obtained from a standard television receiver tuned to a local channel. Since the modulator and oscillator are separated from each other by an attenuator pad, amplitude modulation is free from incidental fm. Output is about 10 millivolts.

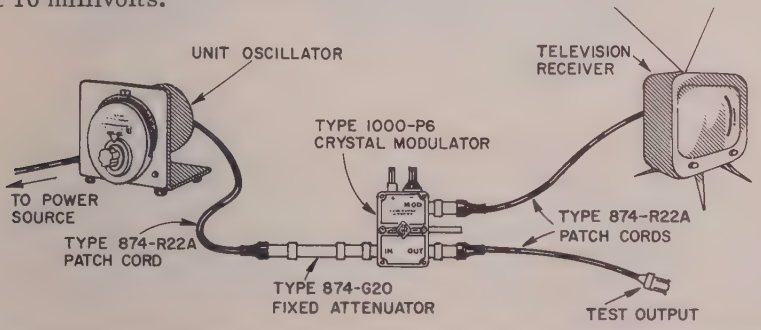

Figure 3-2. Setup of a Unit Oscillator with a video modulator for use as a television-signal generator.

3.4 UNIT OSCILLATOR AS A FREQUENCY CONVERTER.

Connected to a Type 874-MR Mixer Rectifier, the Unit Oscillator can provide the local signal in a heterodyne converter to adapt the Type 1216-A Unit I-F Amplifier for use as a sensitive detector for vhf and uhf signals. (See Figure 3-3.) Without additional tuning, the conversion loss is about 6 db at an intermediate frequency of 30 Mc.

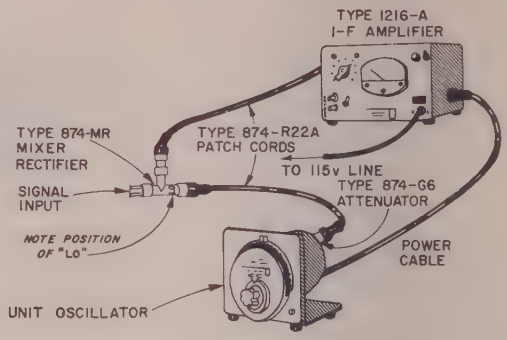

Figure 3-3. Unit Oscillator, with mixer rectifier, set up as a frequency converter.

Similiar oscillators for other tuning ranges in the vhf-uhf region are as follows:

50 - 250 Mc	Type 1215	250 - 960 Mc	Type 1209-C
180 - 600 Mc	Type 1209-CL	450 - 1050 Mc	Type 1361
900 - 2000 Mc	Type 1218		

SECTION 4

SERVICE AND MAINTENANCE

4.1 WARRANTY.

We warrant that each new instrument sold by us is free from defects in material and workmanship, and that, properly used, it will perform in full accordance with applicable specifications for a period of two years after original shipment. Any instrument or component that is found within the two-year period not to meet these standards after examination by our factory, district office, or authorized repair agency personnel, will be repaired or, at our option, replaced without charge, except for tubes or batteries that have given normal service.

4.2 SERVICE.

The two-year warranty stated above attests the quality of materials and workmanship in our products. When difficulties do occur, our service engineers will assist in any way possible. If the difficulty cannot be eliminated by use of the following service instructions, please write or phone our Service Department (see rear cover), giving full information of the trouble and of steps taken to remedy it. Be sure to mention the serial and type numbers of the instrument.

Before returning an instrument to General Radio for service, please write to our Service Department or nearest district office (see back cover), requesting a Returned Material Tag. Use of this tag will ensure proper handling and identification. For instruments not covered by the warranty, a purchase order should be forwarded to avoid unnecessary delay.

4.3 TUBE REPLACEMENT.

If the oscillator tube is replaced, readjustment of the variable grid resistor and the series plate resistors may be required to obtain maximum output and to prevent overloading of the oscillator tube. The grid resistor, on the oscillator base casting, is accessible when the shield is removed. (To remove the shield, loosen the clamp screw and remove the two screws near the top of the shield.) The series plate resistors are inside the base casting, and their terminals project through the side of the base. The three terminals may or may not be shorted, depending on the characteristics of the oscillator tube. (See Figure 4-1.) When the shield is replaced, be sure to tighten the two screws near the top of the shield securely.

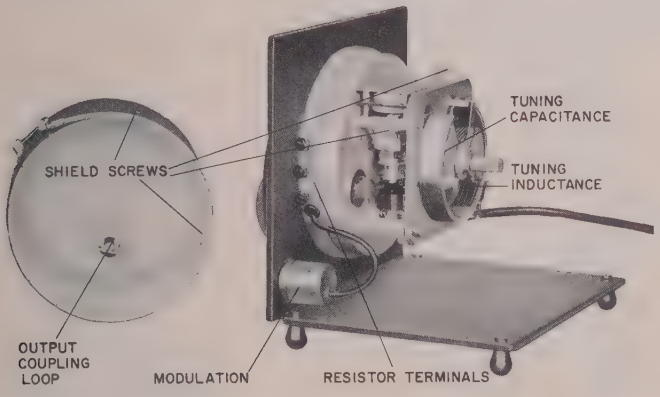

Figure 4-1. Unit Oscillator, with cover removed, showing the tuned circuit and output coupling loop (in cover).

The maximum allowable plate current is 36 milliamperes, and the maximum plate dissipation is 10 watts. For maximum output, the tube should operate near maximum plate current. Plate current is adjusted by means of the grid resistor R3. It will be found that maximum plate current is obtained under no load near the top end of the frequency range. With a fixed power supply with an output voltage over 275 volts at 36 milliamperes, plate series resistance (2000, 3500, or 5500 ohms) may be required to limit plate dissipation or to allow operation with a lower grid resistor R3 to prevent motorboating.

4.4 FREQUENCY CALIBRATION.

Replacement of the oscillator tube may also affect frequency calibration. It can be restored by adjustment of the flexible tab on the plate connector. Before adjusting this trimmer capacitor, allow the instrument to warm up, since warm-up drift may be as much as 0.5 percent. This adjust-

ment should be carried out at the high-frequency end of the oscillator tuning range. It is also important to note that the oscillator shield affects frequency considerably, especially at the low-frequency end.

4.5 CLEANING AND LUBRICATION.

If, after some time, frequency can no longer be adjusted smoothly, clean the spring fingers and the contact surfaces on rotor and stator with carbon tetrachloride, and apply a thin film of light lubrication (Anderol x-2041-1A).

PARTS LIST

REF. NO.	DESCRIPTION	PART NO.
R1	RESISTOR, Composition 100Ω ±5%	6100-1105
R2	RESISTOR, Composition 1 kΩ ±5%	6100-2105
R3	POTENTIOMETER, Wire-wound 5 kΩ ±5%	6050-1700
R4	RESISTOR, Composition 1 kΩ ±5%	6100-2105
R5	RESISTOR, Power 2 kΩ ±5%	6650-2205
R6	RESISTOR, Power 3.5 kΩ ±10%	6630-2359
R7	RESISTOR, Composition 22Ω ±10%	6100-0225
J1	SHIELDED CABLE SET	1211-0300
L1	CHOKE, Air 1.75 μh	4290-0700
L2	CHOKE, Air 1.75 μh	4290-0700
L3	CHOKE, Air 45 μh	4290-0600
L4	COUPLING LOOP	0874-4010
L5	CHOKE, Air 92 μh	4290-1300
L6	CHOKE, Air 45 μh	4290-0600
PL1	CABLE	1208-0370
V1	TUBE, Type 2C43	8320-0200

NOTE:
RESISTORS 1/2 WATT UNLESS OTHERWISE SPECIFIED
RESISTANCE IN OHMS UNLESS OTHERWISE SPECIFIED
K = 1000 OHMS M = 1 MEGOHM
CAPACITANCE VALUES ONE AND OVER IN MICRO-MICROFARDS, LESS THAN ONE IN MICROFARADS UNLESS OTHERWISE SPECIFIED

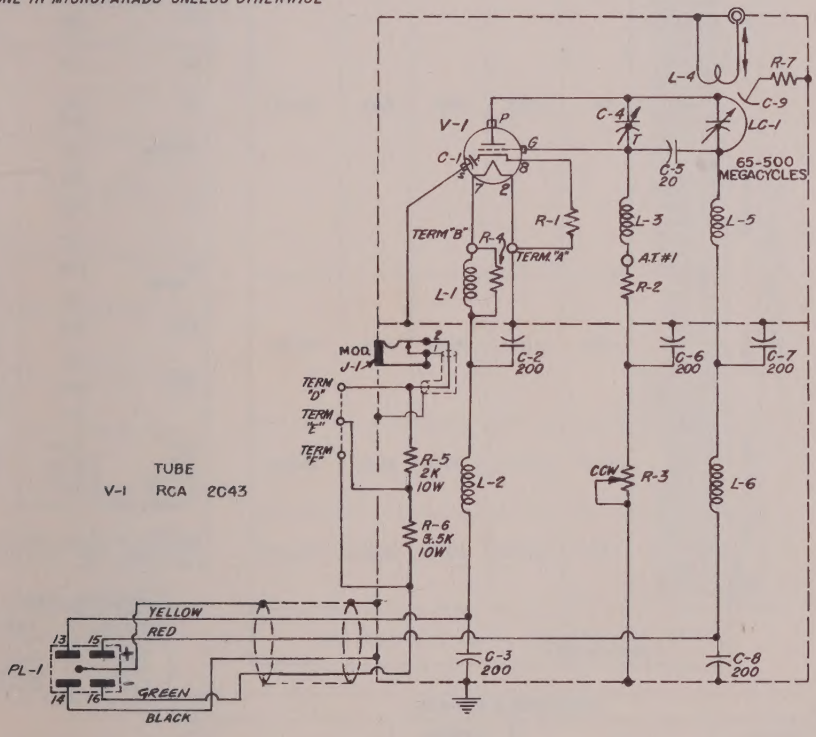

Figure 4-2. Schematic diagram for the Type 1208-C Unit Oscillator.

TYPE 874 COAXIAL COMPONENTS

TYPE 874 CABLE CONNECTORS

APPLICABLE CABLE TYPES	CONNECTOR TYPE	CABLE	CABLE LOCKING	PANEL FLANGED	PANEL LOCKING	PANEL LOCKING RECESSED
	874-A2	-CA	-CLA	-PBA	-PLA	-PRLA
50-OHM	RG-8A/U RG-9B/U RG-10A/U RG-87A/U RG-116/U RG-156/U RG-165/U RG-166/U RG-213/U RG-214/U RG-215/U RG-225/U RG-227/U	-C8A	-CL8A	-PB8A	-PL8A	-PRL8A
NON-50-OHM	RG-11A/U RG-12A/U RG-13A/U RG-63B/U RG-79B/U RG-89/U RG-144/U RG-146/U RG-149/U RG-216/U					
50-OHM	874-A3 RG-29/U RG-55/U (Series) RG-58/U (Series) RG-141A/U RG-142A/U RG-159/U RG-223/U	-C58A	-CL58A	-PB58A	-PL58A	-PRL58A
NON-50-OHM	RG-59/U RG-62/U (Series) RG-71B/U RG-140/U RG-210/U	-C62A	-CL62A	-PB62A	-PL62A	-PRL62A
50-OHM	RG-174/U RG-188/U RG-316/U	-C174A	-CL174A	-PB174A	-PL174A	-PRL174A
NON-50-OHM	RG-161/U RG-187/U RG-179/U					

Example: For a locking cable connector for RG-8A/U, order Type 874-CL8A.

TYPE 874 ADAPTORS

TO TYPE		874-
BNC	plug	QBJA
		QBJL*
	jack	QBPA
C	plug	QCJA
		QCJL*
	jack	QCP
HN	plug	QHJA
	jack	QHPA
LC	plug	QLJA
		QLPA
LT	plug	QLTJ
	jack	QLTP
Microdot	plug	QMDJ
		QMDJL*
	jack	QMDP
N	plug	QNJA
		QNJL*
	jack	QNP
SC (Sandia)	plug	QSCJ
		QSCJL*
	jack	QSCP
TNC	plug	QTNJ
		QTNJL*
	jack	QTNP
UHF	plug	QUJ
		QUJL*
	jack	QUP
UHF 50-Ω Air Line	7/8-in.	QU1A
	1-5/8-in.	QU2
	3-1/8-in.	QU3A

*Locking Type 874 Connector.

Example: To connect Type 874 to a Type N jack, order Type 874-QNP.

CONNECTOR ASSEMBLY TOOLS

TYPE 874-	FUNCTION
TOK	Tool Kit
TO58	Crimping Tool
TO8	Crimping Tool

OTHER COAXIAL ELEMENTS

TYPE 874-		TYPE 874-	
A2	50 Ω cable (low loss)	LR	radiating line
A3	50 Ω cable	LTL	trombone constant-Z line
D20L, D50L	20-, 50-cm adjustable stubs	ML	component mount
EL, EL-L	90° ell	MB	coupling probe
F185L	185-Mc low-pass filter	MR, MRL	mixer-rectifier
F500L	500-Mc low-pass filter	R20A, R20LA	patch cord, double coax
F1000L	1000-Mc low-pass filter	R22A, R22LA	patch cord, double coax
F2000L	2000-Mc low-pass filter	R33	patch cord, single coax
F4000L	4000-Mc low-pass filter	R34	patch cord, single coax
G3, G3L		T, TL	tee
G6, G6L	3-, 6-, 10-, & 20-db	UBL	balun
G10, G10L	attenuators	VCL	variable capacitor
G20, G20L		VI	voltmeter indicator
GAL	adjustable attenuator	VQ, VQL	voltmeter detector
H500L	isolator	VR, VRL	voltmeter rectifier
H1000L	isolator	W100	100-Ω termination
H2000L	isolator	W200	200-Ω termination
JR	rotary joint	W50, W50L	50-Ω termination
K, KL	coupling capacitor	WN, WN3	short-circuit terminations
L10, L10L	10-, 20-, & 30-cm rigid	WO, WO3	open-circuit terminations
L20, L20L	air lines	X	insertion unit
L30, L30L		XL	series inductor
LAL	33-58 cm adjustable line	Y	cliplock
LK10L, LK20L	constant-Z adjustable lines	Z	stand

MISCELLANEOUS COAXIAL CONNECTORS

CONNECTOR TYPE	TYPE NO.	USED WITH
Basic	874-B	50-ohm Air Line
Basic Locking	874-BL	50-ohm Air Line
Panel Locking	874-PLT	Wire Lead
Panel Locking Recessed	874-PRLT	Wire Lead
Panel Locking Feedthrough	874-PFL	Type 874 Patch Cords

L suffix indicates locking Type 874 Connector.

FOR COMPLETE DETAILS, REFER TO THE GENERAL RADIO CATALOG.

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